



The Computer PAPER

Canada's Computer Information Source

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GREATER TORONTO EDITION MARCH 2002 VOLUME 16 NO 38

INSIDE THE

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The Computer PAPER

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1988-2003 15th Anniversary

Greater Toronto
Edition
March 2003

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Distribution begins Wednesday, April 2

June 2003

Cover Story: Computing on the Go
Lab Test: Flat-Panel Plasma Displays

All leading desktop Wednesday, April 30
Distribution begins Wednesday, May 14

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600M/500M/400M/300M/200M/100M/50M/25M/12.5M/6.25M/3.125M/1.56M/780K/390K/195K/97.5K/48.75K/24.375K/12.1875K/6.09375K/3.046875K/1.5234375K/761.71875K/380.859375K/190.4296875K/95.21484375K/47.607421875K/23.8037109375K/11.90185546875K/5.950927734375K/2.9754638671875K/1.487731934375K/743.86596875K/371.932984375K/185.9664921875K/92.98324609375K/46.491623046875K/23.2458115234375K/11.62290576171875K/5.811452880859375K/2.9057264404296875K/1.45286322021484375K/726.43164109375K/363.215820546875K/181.6079102734375K/90.80395513671875K/45.401977568359375K/22.7009887841796875K/11.35049439208984375K/5.675247196044921875K/2.8376235980224609375K/1.41881179901123046875K/709.405899509375K/354.7029497546875K/177.35147487734375K/88.675737438671875K/44.33786871934375K/22.168934359671875K/11.0844671798359375K/5.54223358991796875K/2.771116794958984375K/1.3855583974794921875K/692.77919874796875K/346.389599373984375K/173.1947996869921875K/86.59739984349609375K/43.298699921748046875K/21.6493499608740234375K/10.82467498043701171875K/5.412337490218505859375K/2.7061687451092529296875K/1.35308437255462646484375K/676.54218627734375K/338.271093138671875K/169.13554656934375K/84.567773284671875K/42.2838866423359375K/21.14194332116796875K/10.570971660583984375K/5.2854858302919921875K/2.64274291514599609375K/1.321371457572998046875K/660.6857287890625K/330.34286439453125K/165.171432197265625K/82.5857160986328125K/41.29285804931640625K/20.646429024658203125K/10.3232145123291015625K/5.16160725616455078125K/2.580803628082275390625K/1.2904018140411376953125K/645.200908203125K/322.6004541015625K/161.30022705078125K/80.650113525390625K/40.3250567626953125K/20.16252838134765625K/10.081264190673828125K/5.0406320953369140625K/2.52031604766845703125K/1.260158023834228515625K/630.076396484375K/315.0381982421875K/157.51909912109375K/78.759549560546875K/39.3797747802734375K/19.68988739013671875K/9.844943695068359375K/4.9224718475341796875K/2.46123592376708984375K/1.230617961883544921875K/615.308984375K/307.6544921875K/153.82724609375K/76.913623046875K/38.4568115234375K/19.22840576171875K/9.614202880859375K/4.8071014404296875K/2.40355072021484375K/1.201775360107221875K/600.875K/300.4375K/150.21875K/75.109375K/37.5546875K/18.77734375K/9.388671875K/4.6943359375K/2.34716796875K/1.173583984375K/586.71875K/293.359375K/146.6796875K/73.33984375K/36.669921875K/18.3349609375K/9.16748046875K/4.583740234375K/2.2918701171875K/1.14593505859375K/573.359375K/286.6796875K/143.33984375K/71.669921875K/35.8349609375K/17.91748046875K/8.958740234375K/4.4793701171875K/2.23968505859375K/1.119842529296875K/561.71875K/280.859375K/140.4296875K/70.21484375K/35.107421875K/17.5537109375K/8.77685546875K/4.388427734375K/2.1942138671875K/1.09710693359375K/548.59375K/274.296875K/137.1484375K/68.57421875K/34.287109375K/17.1435546875K/8.57177734375K/4.285888671875K/2.1429443359375K/1.07147216796875K/536.9375K/268.46875K/134.234375K/67.1171875K/33.55859375K/16.779296875K/8.3896484375K/4.19482421875K/2.097412109375K/1.0487060546875K/525.296875K/262.6484375K/131.32421875K/65.662109375K/32.8310546875K/16.41552734375K/8.207763671875K/4.1038818359375K/2.05194091796875K/1.025970458984375K/513.65625K/256.828125K/128.4140625K/64.20703125K/32.103515625K/16.0517578125K/8.02587890625K/4.012939453125K/2.0064697265625K/1.00323486328125K/501.828125K/250.9140625K/125.45703125K/62.728515625K/31.3642578125K/15.68212890625K/7.841064453125K/3.9205322265625K/1.96026611328125K/489.96875K/244.984375K/122.4921875K/61.24609375K/30.623046875K/15.3115234375K/7.65576171875K/3.827880859375K/1.9139404296875K/956.9375K/478.46875K/239.234375K/119.6171875K/59.80859375K/29.904296875K/14.9521484375K/7.47607421875K/3.738037109375K/1.8690185546875K/934.59375K/467.296875K/233.6484375K/116.82421875K/58.412109375K/29.2060546875K/14.60302734375K/7.301513671875K/3.6507568359375K/1.82537841796875K/912.71875K/456.359375K/228.1796875K/114.08984375K/57.044921875K/28.5224609375K/14.26123046875K/7.130615234375K/3.5653076171875K/1.78265380859375K/891.359375K/445.6796875K/222.83984375K/111.419921875K/55.7099609375K/27.85498046875K/13.927490234375K/6.9637451171875K/3.48187255859375K/1.740936279296875K/870.59375K/435.296875K/217.6484375K/108.82421875K/54.412109375K/27.2060546875K/13.60302734375K/6.801513671875K/3.4007568359375K/1.70037841796875K/858.9375K/429.46875K/214.734375K/107.3671875K/53.68359375K/26.841796875K/13.4208984375K/6.71044921875K/3.355224609375K/1.6776123046875K/847.296875K/423.6484375K/211.82421875K/105.912109375K/52.9560546875K/26.47802734375K/13.239013671875K/6.6195068359375K/3.30975341796875K/1.654876708984375K/835.65625K/417.828125K/208.9140625K/104.45703125K/52.228515625K/26.1142578125K/13.05712890625K/6.528564453125K/3.2642822265625K/1.63214111328125K/824.09375K/412.046875K/206.0234375K/103.01171875K/51.505859375K/25.7529296875K/12.87646484375K/6.438232421875K/3.2191162109375K/1.60955810546875K/812.459375K/406.2296875K/203.11484375K/101.557421875K/50.7787109375K/25.38935546875K/12.694677734375K/6.3473388671875K/3.173669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7.9437109375K/28.97185546875K/14.485927734375K/7.2429638671875K/3.62148193359375K/1.810735966796875

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- **ClearStudio™ LCD technology** optimizes TV video gaming and movie applications with brightness, colour, and saturated colours.

In 2003, Canadian reviewers rated ViewSonic #1 in price/performance, product quality and reliability for LCD displays.* Because Performance Does Matter.

15" LCD (1024 x 768 native resolution)									
Model	VE150	VE150	VE150	VE150	VE150	VE150	VE150	VE150	VE150
Resolution	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Contrast	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1
Response Time	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms
Panel Type	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Features	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™
Price	Low	Low	Low	Low	Low	Low	Low	Low	Low

17" LCD (1280 x 1024 native resolution)									
Model	VE170	VE170	VE170	VE170	VE170	VE170	VE170	VE170	VE170
Resolution	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Contrast	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1
Response Time	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms
Panel Type	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Features	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™
Price	Low	Low	Low	Low	Low	Low	Low	Low	Low

19" LCD (1280 x 1024 native resolution)									
Model	VE190	VE190	VE190	VE190	VE190	VE190	VE190	VE190	VE190
Resolution	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Contrast	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1	400:1
Response Time	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms	5ms
Panel Type	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix	Active Matrix
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Features	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™	SuperClear Mii™
Price	Low	Low	Low	Low	Low	Low	Low	Low	Low

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*Specimen for panel display was selected from the Canadian market. © ViewSonic Corporation. All rights reserved. 2003-04-01 (003)

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< COMMENTARY >

Data strip mining

In your cover article ("Skeelick Holmes meets data," TFP January 2003), you mentioned with the right timing a person is able to recover data from a computer even after using the recycle bin and reformatting the drive.

I am selling my computer and Zip disks and... wait to be darn sure that none of [my personal data] is removable by the next owner. Can you explain to me how I can erase everything, 100 percent (I'm using Windows 98), tell me where to get the information on how to do it, or who I can call? Keep in mind I am a home user not a business.

Could I use a magnet to erase the Zip? I noticed that Internet Explorer stores all my past visited sites in the address area. Is there a way to delete all these?

Kad, via email, from Vancouver
Dave Chappelle responds: You can delete items in your Internet Explorer (IE) History folder from the Gear History button in the Preferences dialogue. You must delete files, or empty the cache (found in the same dialogue). The Address Bar and History folders will appear full until you close and restart the browser.

Use Windows Explorer to access the Temporary Internet Files and delete those.

And you probably have a hard disk full of nookies, which will indicate everywhere they've been on the Web. Use Windows Explorer to find your cookie folder, and delete everything in it except "Index."

Regardless of what you delete, the Temp and Recent folders will contain roughly the last 15 or so things you've done and looked at. Close all applications and documents, and wipe those out, too.

After doing all this, empty your Recycle Bin.

As for your Zip disks, your magnet would have to be very powerful to have any effect. To be safe, delete your data, format the disks, then fill them with other data that is non-sensitive. Delete again. If anyone wants to restore the data, it won't offer your banking statements.

Most people think formatting a hard drive will wipe out data, but as you read in the article, that's not the case. Now have to re-install the operating system. First, then, parts of data may still reside in "file slack." Thankfully, the data practices can only be read by those with the proper programming and software. Most of these people are busy solving crimes, not poring through them. Still, it pays to be safe, and you're wise to

be interested in protecting yourself.

To that end, delete your hard drive partition and create a new one. Format the new partition, and install the OS on your drive. To delete and create partitions, use FDISK, a DOS program available in Windows for setup files. It's simple to use, and you should find it useful on the Web.

There are commercial programs that claim to delete data from file space, such as Shredder (www.shredder.com), File Wipe (www.filewipe.com), EraseDisk (www.erase-disk.com), the Assuery (www.assuery.com). Some of these vendors state secure drive markings of your computer's vulnerability, like before them. They claimed our system was dangerously open, even when behind a corporate firewall using Network Address Translation.

Editor's note: Dave Chappelle's book for home computer users (Protect Yourself Online: How to Cover Your Assets Every Time You Log On) will be available soon.

Ask and ye shall receive

In regards to Seán Connerth's article "Outside the box," (TFP January 2003), there are other options, such as USB external enclosures. They provide the flexibility of converting an internal hard drive or an internal CD drive to an external USB component. Enclosures are hot swappable with plug and play via USB. If you need more space, upgrading is easily done by swapping out the old hardware for the new.

Wito, via email

Seán Connerth replies: We actually reviewed a few external enclosures for the same issue, but we had to hold them back because of space restrictions. That article is running in this case ("A few twists in the external drive"). Though it may not use in all editions, it will be available online (www.technicalreport.com) in late February.

Glossary, what glossary?

In regards to a previous letter ("Jargon, what Jargon?" Readers' letters February 2003) mentioning how tough it can be to follow all of the acronyms and tech-related jargon, I fully agree. It can be quite a handful to learn and remember all of the new and ever-changing words and acronyms. One site I would highly recommend is www.mcpedia.com. This site is specifically geared for computer jargon and provides a simple search with understandable definitions.

Craig Snider

TFP replies: It's a great resource, and that's why it's at TFP here bookmarked. As requested in the original letter, we are working on a glossary that we hope to include in upcoming issues. □

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Inside the new digital home

By David Tanaka

What has digital technology done for you and your family lately? Answer to that question have typically centered around personal computers and the Internet. At this year's Consumer Electronics Show (CES), held in Las Vegas in early January, however, there were growing signs that digital technology is invading other rooms in the house. The potential consequences of this range from trivial to lifestyle altering.

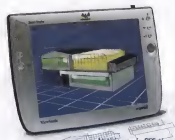
Foundations

We humans have our music, videos, and pictures, as well as general instructions, directions, and other stuff we need to keep track of for living. Once these diverse types of information are converted into digital data, they become amenable to storage, transfer, reproduction, and manipulation on a common platform: silicon. To a computer, data is data.

That's one part of the digital convergence foundation, and it's having an impact on computing itself. Dumb appliances of all types are being smartized up with a processor and some memory. The personal computer as we've known it for the past 30 years is being pulled apart, and its pieces reformed into new products. Witness the popular Creative Nomad Jukebox and Apple iPod—both devices with a little processor and interface to handle data. We humans refer to this category of data as music, but a Jukebox could just as easily store financial reports.

If visualization is your focus and not storage, why not do the same kind of repurposing of the computer monitor? In fact, companies like ViewSonic have done just that. In the case of the separate V130 and V150 Smart Displays, the flat-panel screen has an embedded 802.11 network card, which allows the householder to compute anywhere in the house past by carrying around the display, not the whole computer. (Note: The display in the photo illustration for this article is an unpaired.)

Microsoft used the Smart Display as part of its CES exhibit, and the wireless connectivity feature illustrates the other major part of the digital convergence



At this year's CES there were growing signs that digital technology is invading other rooms in the house. The potential consequences of this range from trivial to lifestyle altering.

foundations communication. As Intel chief executive Craig Barrett said in his keynote address, going forward all computing devices will also be communications devices and all communications devices will also be computers. A few exhibitors took that theme to heart, setting up their booths like various rooms in a typical house, and furnishing them with products that have a digital root.

In the kitchen

Appliance distributor Salsin Inc. (www.salsin.com) announced a marketing and branding campaign it calls the Beyond Connected Home Initiative, along with the first Beyond product: the Westinghouse ICEBox (www.icebox.com). This product has nothing to do with refrigeration, but is essentially the next iteration of the Windows CE-powered Web appliance we've heard about for the past few years (ICE in this case stands for information, communication, and entertainment).

It can be used as a TV set, a computer for surfing the Internet or doing email, a DVD and CD player, PM radio, and also a home surveillance system when you add an optional video camera. The

kitchen-friendly product comes in countertop and under-cabinet models. Both come with washable keyboards and remote controls, as well as cable, USB, Ethernet, RJ-11, and audio in and out connectors. The under-cabinet model is available now (in the U.S. and selected locations in Canada) for US\$2,295, while the countertop model is scheduled to be available in late spring for US\$1,600.



Another Beyond product Salsin says will be available by fall is a microwave oven with a bar code reader. The householder sweeps the barcode on a microwaveable food package, and if the package is in the oven's database, it automatically sets the correct cooking time and temperature.

Also attempting to bring the cookery

into the 21st century is TMBO LLC (www.tmboc.com), which is turning ranges and microwaves into Web clients. TMBO stands for Thought's Menu Intelligent Oven, and company president, David Hershberg, says his appliances address a common problem faced by today's workers: they often don't know when they'll be home for dinner. Setting the cook cycle on a timer can lead to an overcooked dinner if the worker is delayed by traffic or an unplanned meeting, plus leaving uncooked food in an oven all day has its own problems. The TMBO ovens include a refrigeration unit that keeps food cold until it's time to start cooking and a cooking control interface that can be accessed remotely through a Web browser.

The above links to the home computer's Internet connection network using Powerline home networking technology. Hershberg's scenario is that if you're held up at work, you surf to your oven's controls over the Web from your office computer or Internet-ready cell phone and adjust the cooking program appropriately. The company states it intends to have products on the market by the latter part of this year.

Sail 'n' sew

In Microsoft's booth was a product we initially reported on last summer: the Artiva 2000. Windows CE-powered sewing machine from Bernina (www.bernina.com). Computerized sewing machines aren't new, but Bernina extends the concept with a processor running Windows CE, a color touch screen display, an optical modem for giving online and downloading patterns, and a USB port to which you can connect a CD-ROM drive—for more patterns.



The sewing machine (Bernina calls it "the creative sewing system") also includes a pattern-recording program called the ART Embroidery Engine that

Continued on page 14

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AOpen
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Inside the new digital home

Continued from page 12

reduces the number of stitches needed in a design after it's been rescaled. "But it's still a sewing machine at the end of the day," said Mark Mallin, a Microsoft spokesman working the Bermuda area, after a US\$6,000 one-

Home entertainment, 2003-style

It's in the rec rooms that digital convergence has its most familiar dimensions. Many of us already consume digital forms of music, video, and movies through CDs, MP3s, DVDs, and digital TV channels. Many home entertainment or in-car stereo will already play copy-righted CDs of MP3 music as well as the commercially packaged stuff.

But why couldn't you go directly to the several gigabytes of music on your computer's hard drive? Some of the latest converged devices let you do just that: they are two-headed monstrosities that bridge the computer and home entertainment worlds.

For example, the Voyetra Turtle Beach AudioTron (www.turtlebeach.com) looks like another piece of stereo equipment,

and has the usual audio-visual connectors for your stereo and TV, and a remote control unit. But it also has a Home PhoneLine network port or an optional Ethernet port to allow you to



connect to a PC or home network, which presumably is in another room in the house. The AudioTron then bridges the two systems, allowing you to pull MP3 tunes from your computer's hard drive and play them through your home stereo.

Cable (www.cable.com) has a device with similar functionality, but is available



with 802.11b, so it does its thing wire-

lessly. Prensing (www.prensing.com) takes it up a notch with the Prensing MediaPlayer that connects PC home



entertainment worlds and allows you to play back and control music, still images, and video residing on your PC. Prensing has announced an alliance with personal video recording software developer, SoapStream to integrate personal video recorder (PVR) functions into the MediaPlayer.

We saw one hi-fi products company, Onkyo, that has dropped with the separate black box altogether and integrated an Ethernet port into some of its stereo receivers. Plugged into an Ethernet network, they become network channels. They ship with software called Net-Stream that allows you to access and play music files on your computer right from the



receiver, and also play Internet radio stations at your home network but no always-on connection to the Net.

But there's also a move, led largely by Microsoft, to move the PC out of the office and into the living room, right next to, or even displacing, the hi-fi gear that usually resides there. Microsoft Canada spokesman Greg Barber says Canadians are using PCs at home increasingly for non-work-related activities. Tim, coupled with the fact that Canada has one of the highest adoption rates for high-speed Internet, sets the stage for taking the PC out of its work clothes.

Windows XP Media Centre Edition is an attempt to do that, and in Microsoft's booth were a number of examples of PC manufacturers dressing up the beige box. One striking model, the DeVizio from Richmond, B.C.-based Tiger

Continued on page 12



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Boxing !!! Can not Miss !!!

that hit the market is both smaller and more powerful than the one it replaced. It is ironic that this very technological progress, that gives the industry the image of polluting, is also the mechanism by which the industry fulfills its role to reduce the quantities of material destined for disposal. My first experiences with computing were as a graduate student in the early '60s. I did research that involved neutron counting. The output of my neutron detector was sent to a multi-channel analyzer (MCA) and the data that came out of it was then punched by hand onto cards that could be read by a mainframe computer. In those days, a 256-channel MCA was a cabinet with a double set of 39-inch panels that were 6 ft high. An IBM 7040 computer cost about \$1 million, filled a room, needed a full-time operator, and then there was that room full of headache-producing card punches.

Today, a 16,384 channel MCA is a single plug-in board you can't buy a computer with so little computing power as that 7040 and the card punches are gone. I would have taken a good-sized truck to cart away that old system. If the steel cabinetry could be melted down, there was probably enough to build a car. By the mid '90s, there was a PC on every desk, each with separate sound, video, I/O, and network cards. Those are now integrated into the motherboard. The case on my present computer uses much thinner steel than did my initial XT. We have since reduced the pile through better technology and miniaturization and I don't think there are many industries that can match us.

Reuse

The third R is reuse. When I bought my latest computer, I didn't throw out the old one. Instead, I installed a LAN. I have a Windows Me machine that can run the old software and a Windows XP machine to run the latest. I also have a backup system that allows me to store data files from each hard drive of the other. Other readers may see other uses for their old computer. With all these concerns about security, it could act as a dedicated link to the Internet that is separate from the working computer, or it could run a file server.

A spouse, with minimal computer needs, might find a separate computer preferable to sharing a single computer. You just can't give them, to the kids, an

Continued on page 52

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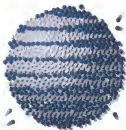
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18Mb PPPoE+H	N	Y	15GB	Y	10	10MB	20 Hours	N	\$50.00	\$59.95
36Mb V.90	Y	Y	20GB	N	5	10MB	20 Hours	Y	\$275.00	\$109.95
36Mb V.90+H	Y	Y	20GB	Y	10	10MB	20 Hours	Y	\$275.00	\$134.95

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

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





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* HANDS ON *

Colour in all the right places
Continued from page 52

one that comes with everything you need—whether you want it or not.

The good news is it's a great printer. The HP-4000CN features excellent text output, photographic output on par with pretty much every other colour laser printer (good but not stellar), and a rated print speed that actually matches the rated speed. The built-in duplicating is also very easy to use, which is a big plus if you need to print large two-sided print jobs.

The tower configuration with the HP-4000CN has its pros and cons. Instead of a full cartridge taking many other printers, the replacement tower comes in a tube that locks directly into the slot on the top of the printer (thankfully hidden away behind a plastic panel during regular use). When you turn the lever that locks the tube into place, it opens a window on the tube which then dumps the toner directly into an opening on the top of the printer.

This can be a messy business, especially if the cartridge you're removing isn't completely empty; toner can fly out everywhere. This isn't a deal-breaker, it just means you'll have to take more care changing toner than you would with other printers. And even though the toner replacement cost is pretty stiff, it's still cheaper to replace one of these tubes than it is to replace a full cartridge model (and these toner modules take up far less space in your supply room, too).

Bottom line: for a higher initial hardware investment, you get a top-quality machine with a lot of functionality, and the money you save on toner over the long run will most likely make up for any frustrations you have with the refill format.

Hewlett-Packard Color LaserJet 2500n

From Hewlett-Packard.com
Estimated price: \$1,100
Cartridge cost: \$0.03/page (\$50 per colour)
Pros: Reasonably lightweight. Easy to set up.
Relatively inexpensive.
Cons: Toner gets quite messy when dumped out.
For the longest time, the machine of "colour laser" would elicit groans, because it meant dealing with a toner that was a pain to handle and calling on several colleagues to help you lift it. While the situation has improved somewhat overall, the HP Color LaserJet 2500n is the first one I've been able to get out of the box and set up all by myself, even

Including the third paper tray module (a crane and a degree of geometry would be helpful for lifting some colour lasers on top of their additional paper trays).

The stylish Colour LaserJet 2500 line starts at a very affordable price point: \$1,999 for the base model (2500L), which comes with only a 125-sheet paper tray. Those who want to use the printer for more serious work will want to bump to at least the 2500 (no letter designation)—which costs \$3,899 and ups the paper input to 275 sheets—or to the 2500N, which adds networking.

This month we looked at the top of the line model, which adds networking and increases the overall paper capacity to 375 sheets via an additional 500-sheet module. No matter which version you choose, the price point is still fairly low in comparison to other manufacturers' models.

Of course, that comes at a cost: the 2500 uses a rotating cartridge configuration. This means additional mechanical wear and tear over the long run, and longer print jobs in the short term (each page goes through the machine four times, which means a colour print job will take four times as long as one in black only). The good news is that the cartridges are quite easy to install—not where the case when the printer uses a canonical configuration—and the colour output is very good.

One thing worth noting: while there's no duplicating unit on the Colour LaserJet 2500N, the printer driver on your PC can allow you to duplex manually when you request the duplicating option, a dialogue box shows you a graphic with instructions on how to reload the paper to duplex your document. It's a nice alternative, but it may not be quite so good for network print jobs in a busy office, because it holds the printer until you get to it.

If colour output speed isn't your prime concern, the Color LaserJet 2500N is a nice inexpensive way to get a reasonably powerful colour laser configuration into your office.

Leamark C723n

From: leamark, www.leamark.com/canada

Discounted price: \$2,509 (\$2,699 as listed, with USB card)

Cartridge cost: \$160 black, \$284 per colour (cyan, magenta, yellow)

Print speed: test output: Single-page printing: High-quality reproduction

Continued on page 36

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Colour in all the right places

Continued from page 35

Can USB connectivity optional. Complicated setup not for the faint.

Of the colour laser printers we looked at this month, the Lexmark C720 is the most traditional design and feels like it weighs a ton. The setup is also a lot more intimidating: there are a number of pieces to install that you don't necessarily have to worry about with other new

colour lasers—like the oil container and small rollers—all of which require proper placement and fastening into place. To top it all off, the driver install isn't particularly user-friendly, and is definitely something that network administrators will feel more at home with than would a typical home office user.

This last point is especially frustrating because Lexmark has some of the most user-friendly driver install programs going when it comes to its inkjet line.

The flipside of this frustration is that the driver setup is very powerful, giving the user (presumably someone in your company's IT department) full control over all of the driver setup parameters, and the ability to install Lexmark's extremely useful MarkVision control software.

The old-school design of the printer is reinforced by its connectivity options: it comes with a parallel and not a USB connector. A couple of years ago this would have been taken for granted, but

it seems odd in 2003. We added USB to the C720 using Lexmark's optional USB adapter card (\$154); just undo a couple of screws on the rear panel, slide a panel out, insert the card, slide the panel back on, reinsert the screws, turn the printer back on, and the USB port is ready to use.

Despite any frustrations with setup of the C720, once you have it running it's a heck of a printer, both in terms of use-

Continued on page 38

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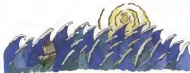
The shipping news (on the Web)

By Geul Wheelwright

Most small businesses cannot afford a shipping department. And in reality small businesses—where the entire operation consists of a handful of people—shipping goods out to customers may simply fail to be where it's needed when a call comes in.

And that's OK, because there are lots of highly efficient, well-run courier companies around these days that will make sure your goods can get to customers safely and quickly. All of these companies also give you the option of booking pick-ups and tracking shipments online.

One important extension of this ability is that you can also calculate shipping costs online—so the invoice you might typically send out to your regular customers along with the goods can include the shipping costs. Each of the leading courier companies operates their online services a little differently, so it is prob-



There are lots of courier companies that will make sure your goods can get to customers safely and quickly, and give you the option of booking pick-ups and tracking shipments online.

My helpful to take a quick tour of what—and how—you can calculate, book and track shipments with each.

The Parcelator process

The Web site for this Canadian-run ser-

vice (www.parcelator.com), which is an outgrowth of Canada Post, greets you with a "splash screen" for quick access to the kinds of things you are most likely to want to do right away. There are icons that allow you to Ship Now (or cancel a

shipment). Get Estimate, contact Customer Service and Information, find out about Parcelator's e-business offerings, and get details on its Remote Management Services (which help customers handle returned goods).

If you click on Ship Now, you're asked to begin with a user name and password. If you've never been to the site before, you can be assigned one by clicking on the First Time Shipper button. The process of registering will require that you enter your business details (along with your Parcelator Business Account Number if you have one, or your credit card details if you don't).

The other buttons do pretty much what you would expect. If you want to book a lot of shipments with Parcelator, however, you may want to download the company's Windows-based Parcelink shipping software. It includes all of the options available on the Web site.

Continued on page 30



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The shipping news (on the Web)

Continued from page 42

(carrying pick-ups, checking rates, and tracking packages), but also allows you to do some slightly more "analogous" tasks, such as printing out bills of lading (the paperwork that typically goes along with anything you ship from a consumer company).

The software is free and built to run on a "lowest common denominator" system (i.e. one with at least an Intel 486/386 processor, Windows 3.1, 4 MB of RAM, a modem, and, er, printer). You'll also need a Parcelator account number.

If you are a technologically challenged company, this software may be a good option. If you also need to fill out lots of bills of lading, then it also makes sense.

FedEx with FedEx

FedEx is one of the world's shipping giants and its Web site (www.fedex.com) reflects that. When you point your browser there, the first thing you are asked to do is select the country from which you operate. Luckily, Canada is considered important enough to make the grade in the FedEx list (and gets two entries: "Canada-English" and "Canada-Francais"). As usual, you'll find us right between Cameroon and Cape Verde.

My first temptation was to ship myself off to Cape Verde. It seemed highly quatsral and a welcome diversion from the water ruts of Vancouver.

But I digress. The FedEx Canada site is

similar to Parcelator's in that it allows you to go directly to the most common tasks, but has links to far more goodies from the front page.

You can, for example, go straight to registration without having to move through any intermediate screens. There is also a detailed Shipping Guide that you can dip into at various stages (rather than the "guided tour" offered on the Parcelator site) and a "Track your Packages" box that lets you go after tracking numbers right from the front page and takes you directly to a screen where you can see what is happening with your package.

As with most sites, FedEx offers a number of electronic business tools—including dedicated desktop software, Web tools, and even the FedEx Ship Manager API (Applications Programming Interface) so you can build FedEx ordering into your corporate applications. The latter is probably not going to be heavily used by small businesses, but it's cool that FedEx has built one.

Probably most interesting is the desktop software. It is offered in three flavors: one version for those running with Windows 95 on an Intel 386 processor or better, another for Intel 386 processors or better, and another version for those using Macs (it requires Mac OS 7.1 or higher and at least a 66023 processor). Clearly, FedEx has the resources to produce a range of solutions that cater

to a slightly broader crowd. Clearly, if you run your office on the Apple Macintosh platform and plan to do a moderate amount of shipping, this application will appeal to you.

UPS: When it doesn't stand for uninterrupted power supply

United Parcel Service (UPS) is another giant American shipper that has been gracious enough to offer service to our fair country. Like FedEx, you have to select the Canadian version of the service from the company's main Web site (www.ups.com). Once again, we are listed just below Cameroon—but without a choice based on language.

In fact, if you want to visit the French Canadian version of the UPS Web site, you have to look in the lower-left corner of the screen, where you'll see it listed under a "Change Language" heading. That actually surprised me. I still remember when the French-Canadian version of Windows 95 was going to be later to market than the English version—and how it became a big controversy in Quebec and caused the provincial government to vow that it would remove all bilingualisms with Microsoft on the basis of this dispute.

But if you don't need to use the French language version of the site, none of that matters. The UPS site is otherwise simple and serviceable. It includes front page icons to access package tracking, shipment arrangement, rates, transit times, shipment pickup, drop off, and supplies (i.e. envelopes, boxes, and so on).

UPS also reminds its customers on the front page that it is a member of the Aer Mail program—something to bear in mind if you are seeking to eventually

ship yourself somewhere with points you build up from sending goods to customers.

Finally, UPS also provides its own software and technology solutions for customers. You'll find that under an icon entitled UPS Customer Technology Programs.

This is actually quite interesting. Rather than simply providing shipping software—which you can install on your computer as a substitute for (or adjunct to) the shipping facilities on its Web site—UPS has also created a number of hardware and software bundles with leading vendors.

The company's shipping software is called UPS Connect, but it also offers special deals with Dell, Gateway, and IBM to allow you to buy the hardware that will optimally run its shipping solutions.

Who to choose?

As with any solution, selecting the best provider is always dependent on what you need. And the list above is by no means comprehensive. In different regions, there are different leading providers—and more other international operators (such as DHL).

But based purely on the criteria of being able to do a great deal with what is offered on the Web site—and within the freely available shipping software—I would say that FedEx would probably get my vote as the preferred online shipping choice.

Of course, your criteria will include a lot more than how well a company's shipping Web site functions. It will depend on how good the service is in the area—and on how well it serves the area you want to ship to. □

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Enfish a powerful computer assistant

By Kerry Dawson

For most of us, computers have become an integral part of our lives. In addition to helping us create and analyze information, they have become multimedia information centers that store all kinds of stuff and allow us to exchange it with others. This burgeoning capacity, however, has made it increasingly difficult to locate what we have created and stored on our computers. Add the Internet to this, and the task of finding information can be daunting.

Enter English Personal and English Find. These tools provide an excellent means for quickly sifting through all the information stored on your computer and the Internet. In addition, both applications can search information management programs, such as Outlook.

English Personal and Find create an index of all information stored on the computer's hard drive. Thus, a simple text search generates results extremely

quickly. Searches can be further refined, making it easier to pick out what you're looking for.

I've been using English Personal (personally called OutSpoken) for more than two years (version 5.0 should be available by now) and I couldn't do without it. Although I could likely locate the same information using the search functions in Windows, Outlook, and an Internet search engine, English brings it all under one roof. Plus, since you're searching an index, you don't have to wait for your computer to sift through reams of information stored on your hard drive or in Outlook.

By way of an example, let's say I know that one of the hundreds of music files stored on my computer contains the name Beat. By typing "Beat AND mp3" into the Traffic Pad dialogue, the search results instantly show Dark Beat with an icon indicating it's a music file. Double-click on it and it will launch the associated media player and play the music file.



English Personal - English Personal
 1999, 2002, www.mhfi.com
 Steve L. Cook (Personal) 1999, 2002

As another example, say you have a contact and want to see everything you've done related to that contact in the last week. Type the contact's name in the English Field dialogue, and using the date filter, choose information for the last week. This will quickly generate a list of all the items in which the contact's name appears during the period you've defined.

Performing similar searches using standard tools can be very time consuming.

ing and in some cases downright laborious. Though *English Find* is the little brother to *English Personal*, it's the function I've found the most useful. However, *English Personal* does go a step further by giving you a table-based interface that can be used as a powerful information manager.

Think of English Personal as a portal that brings information on your computer and the Internet together. When English Personal starts up, it shows your Outlook Calendar, Tasks, and Mail in one interface, to which you can very easily add custom pages that access Web sites. You could, for example, add the Web page for your favorite Internet portal or weather Web site. It's an extremely customizable environment.

Finally, *Enlish Personal* allows you to add multi-page custom pages in which you can group common information. If you're doing research, you might create a custom page that has tabs showing Web sites you need to access frequently relat-

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ed to a research project. Just click a tab and you're taken to that Web site.

On its Web site, Enfish includes a number of standard pages, such as Briefing, Entertainment, and Finance, that can be customized, giving you a good idea of exactly what Enfish Personal can do. Many of these include valuable Web sites that you can put to immediate use, adding your own content, or you can design a custom page from scratch.

Finally, searches can be saved as bookmarks or as tabbed Web pages. In either case, it's easy to return searched information for future reference without having

to go recreate a search from scratch. This application also attempts to integrate information from various sources. At the top of Enfish Personal, for example, is a variety of buttons including one that says Contacts. Clicking it lists all the contacts from your information management program (in my case Outlook). Choose a contact and at the top you'll see all of their information neatly laid out. But below this is displayed information related to that contact. From the contact, you can easily create a new mail item or choose an existing mail item from the list below, opening and replying to it by double-clicking on it. The

new mail or replied-to mail item is then added to the index and now becomes part of your Enfish environment.

Enfish provides a powerful tool to help you sort through the massive amounts of information you can store on your computer. Although I use Enfish Find more frequently, I recommend Enfish Personal (Find is included and can be run on its own). Once you start using the custom page to sort information in this, you'll find it an extremely valuable tool.

I always have Enfish Personal running on my desktop and frequently reference information there. It not only provides me quick access to frequently viewed

Web pages, it also acts as a kind of index checking things I need to view on a daily basis, such as my e-mail. You may only use it for something as simple as the shopping page, but you'll probably find it's worth the little extra money for the enhanced functionality of Enfish Personal.

If you'll only want to do fast searches on your hard drive or the Internet, Enfish Find will suffice.

Whether you choose Enfish Personal or Find though, this tool will become indispensable to your everyday computing environment. It truly makes computer use easier. ☐

Sunday morning Sams

Continued from page 21

"No other way to describe it."

He built his own remote-controlled machines out of Meccano sets, and gave radio-controlled toy boats and cars more capability. "Computers are little brains, but they don't have any legs. So I give them legs." By the time he was 20, he had built a crane controlled by an Apple II computer.

He studied computer science at

Capitola College, Simon Fraser University, and University of British Columbia, and has just finished his master's degree in human kinetics, the study of how people move. One of his current projects is a semi-autonomous wheelchair, which would have the intelligence to avoid doorframes and follow walls. Using it will be like riding a horse instead of driving a car.

Each summer, Nagelkerke—along with other members of the club—runs a

five-day course in robot design at St. George's school. His students, in Grades 6 to 8, first build and operate a mini-robot from a kit, which they get to keep. Then, using Lego Mindstorms sets, they build increasingly complex robots for new challenges, culminating with a game of lang of the ball, in which the robot has to find a black square on a white surface and stop there while others try to push it off.

While not many kids sign up for the

robot-building course, Nagelkerke's experience suggests they may be more suited to the craft. The boys get distracted by putting their machines into death matches, he says, while the girls are cooperatively testing and improving their designs. By the time of the final contest, the girls' robots are several generations ahead of the boys', and was more often.

Today, kids are surrounded by incredibly

Continued on page 70

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More advanced macros for Excel



Visual Basic offers many useful programming tools for adding functionality to Excel worksheets. This month we look at macros.

If you're familiar with Excel, you'll know that macros are a way of automating

common tasks. The simplest way to create a macro is to record your keystrokes as you perform a task, then replay them. This method is severely limited, however. For example, you can record keystrokes for placing your company name in the top-left corner of a worksheet. But what if you work for two or more offices of your company, will you create one macro for one office and another for another office? You may have to create so many macros that you become inefficient all over again.

A more sophisticated solution is to create one macro that allows you to select the office you are working for, then types the relevant data for you. To create this type of

macro, you need to employ Excel's Visual Basic for Applications (VBA). You can, however, record bits of the macro code (e.g. typing the data into the cells), then copy and paste the recorded code into the final application alongside code that can't be recorded. This is an easy way to get started in VBA.



When run, the macro enters you a choice of data to enter into your worksheet.

This month, we'll create a macro to perform the task of entering data into a cell of a worksheet—you'll be able to choose which data to enter from a special form you'll create for the purpose. You'll also

see how to get macros to make decisions and how to create and run a userform.

Before you begin

To create the project, open a new workbook and choose **Tools, Macro, then Visual Basic Editor**. Ensure the **Project and Properties** boxes are open. If they aren't, choose **View, Project Explorer and View, then Properties Window** to display them.

In the **Project Explorer**, locate the entry for the **Personal.xls** file, click on **This Workbook** to select it, and choose **Insert, Macroform** to add a form to your workbook. If the toolbox isn't visible, display it by choosing **View, Toolbars**. If the **Personal.xls** file isn't there, you must first record a macro and save it to your **Personal Macro Workbook** to create the file.

Adding the controls

Using the tools in the toolbox and the dialogue in the **Format** as a guide, add each of the following controls to your form and set the properties as described. Begin by clicking the **Form** and locate **Caption** in the **Properties** list. Alter **Caption** to read **Enter Office Data**.

From the toolbox, click the **CommandButton** tool and drag two command buttons onto your form. Click the first one and set its **Name** property to read **cmdOK**, its **Caption** property to read **OK**, and its **Accelerator** to read **E**. Click the second command button and set its **Name** property to read **cmdCancel**, set its **Caption** property to read **Cancel**, set its **Accelerator** to read **C**, and set its **Cancel** property to read **True**.



Create a worksheet that looks something like this, with the properties dialogue on the right.

From the toolbox, click the **OptionButton** tool and drag three option

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 Fax: 905-882-1123
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 Sat: 9:30-18:00
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 Mon: Closed

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 1250 Steeles Ave. E.
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 Tel: 905-283-5880
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button onto your form. Click the first one and set its Name property to read **splitWindowing**. Its Caption property to read **Windowing Office**, and its Value property to read **True**. Click the second option button and set its Name property to read **splitToronto** and its Caption property to read **Toronto Office**. Click the third option button and set its Name property to read **splitVancouver** and set its Caption property to read **Vancouver Office**.

Finally, from the toolbar click the Label, text, and drag a label across the top of your form.

Click the label, and set its Caption property to read **Select Office**, and click **Enter Data** to finish.

Click the Save button to save your form.

Add the code

When the form is complete, you need to add the code for each element in the dialogue that should respond to being clicked. In this case you'll add code to the two command buttons, as you will want data to be entered if the Enter Data button is pushed and you'll want the dialogue to be closed if the user clicks Cancel.

To enter the code, ensure you have the **Form** window selected in the **Project** window and choose **View, Code**. (To return to your dialogue box at any time choose **View, Object**).

Type the code exactly as it is shown here:

```
Private Sub cmdOK_Click()  
    If splitWindowing.Value = True Then  
        OfficeName = "Windowing Office"  
        OfficeAddress = "Windowing Office Address"  
    Else If splitToronto.Value = True Then  
        OfficeName = "Toronto Office"  
        OfficeAddress = "Toronto Office Address"  
    Else If splitVancouver.Value = True Then  
        OfficeName = "Vancouver Office"  
        OfficeAddress = "Vancouver Office Address"  
    End If  
    Range("A1").Select  
    ActiveCell.FormulaR1C1 = OfficeName  
    Range("A2").Select  
    ActiveCell.FormulaR1C1 = OfficeAddress  
End Sub
```

```
Range("A2").Select  
ActiveCell.FormulaR1C1 = OfficeAddress  
Unload Me  
End  
End Sub
```

Private Sub cmdCancel_Click()

```
Unload Me  
End  
End Sub
```

Test the macro

Save your work, then test the macro to make sure it works from the Visual Basic Editor by clicking the Run button on the toolbar (or choose **Run, Sub/User Form** from the menu). When the code runs, you'll see a dialogue prompting you to select the office you will be producing the worksheet for.

Click an option and press **Enter** Data to enter it into cells A1, A2, and A3 of the worksheet. In practice, you will replace the text entries in quotes in the macro code with the actual description and address for each office.

Test the macro once by clicking the Enter Data button. Run the macro again to test how the Cancel button works.

Before you can run this macro by itself you'll need a small piece of code that displays the form when the macro is run. In the Visual Basic Editor choose **Insert, Module** and, in the Code area that opens on the screen, type this entry:

```
Sub ShowData()  
    UserForm1.Show  
End Sub
```

Save your file. You can now test from the Visual Basic Editor.

Add the macro to the toolbar

If you add this macro to a toolbar button it will be easier to find and run when you need it, to do this, right-click the toolbar and choose **Customize**. Choose the **Commands** tab and, from the Categories list, select **Macros**. From the Commands list box drag the **Custom Button** onto the toolbar and right click it. Choose **Assign Macro** and, from the Assign Macro dialogue box, select your macro (in this case it's **ShowData**) and click **OK**.

Right click on the new button and choose **Edit Button Image** to create your own custom button face or change

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Photo inkjets allow PC free printing.

Continued from page 44

your memory card, getting to the image number you want is easy (hold down the button longer and it scrolls through the index by tens). After you select your pictures, it's very easy to pick your paper size, the number of photos per page, and finishing options using the very graphically-oriented LCD menu. The printer also sports a USB port that allows you to print directly from compatible Canon PowerShot cameras.

Of course, you can use the \$430 CD with your PC as well, whether you want to print to it or remove images from the card slot. The output quality on the printer is excellent in both photographic and black text modes. The one quirk with the specs on this printer is that it doesn't sport a "pages per minute" rating, instead opting for a measure of how long it will take to print out a photo (about one minute for a full and two minutes for an 8x10 using normal settings). It's quite possible that this means we chose because the printer is not (to put it generously) all that fast at text output, we were getting about two pages per minute in normal mode, and only about three in draft.

The \$430 CD ships with a CD of photo editing and management software, including ZoomBrowser, PhotoRecord, ImageBrowser, and PhotoStitch.

Overall, the Canon \$430 is frustrating: it has great output quality and a killer PC-free menu system, but the print speed is just too slow to recommend it to anyone who will need to do more than occasional text output.

Epson Stylus Photo 960

From: Seiko Epson Corp., www.epson.com
Suggested price: \$349

Cartridge cost: \$18 per colour

Pro: Individual ink tanks. Excellent reproduction. Photo-page roll and cutter assembly.
Con: Cost is higher. Option possibly irritating.
Slowest output. Small output tray.

You know that the Stylus Photo is a pretty serious printer the second you open the box—it has so many features that you'll be lost if you try to set it up without referring to the manual. Some of these features you may not want to set up right away: in addition to the upper paper support, there are also two clips that are used with roll-style photo paper, an auto paper cutting unit that attaches to the front of the printer, and a "binder" that clips on to the front and catches any photos that come out of the cutter (there's also a roll of photo paper in the box, but it will give you only about 19 or 20 4x6-inch prints, if you're planning to use that feature regularly, don't forget to buy extra rolls.)

Setting up the ink takes a bit of extra time, too, owing to the fact that the colours are separated into seven different ink tanks. Strategically, two of these tanks are the same shade of black—presumably that's so Epson can use the same cartridge design as the colour tanks to keep costs lower, while still putting enough black ink onboard to print photos and documents with black text. While the ink for the Stylus Photo 960 doesn't have the same lightfastness rating as some other Epson printers, it still quite good: 27 years when used with Epson photo paper.

The printer handles photographs quite well, with excellent output and borderless printing. While the output quality was reasonably high (with some bleeding on standard bond paper), it was also very slow. It's worth noting that Epson doesn't indicate the print speed of

this machine on its box or in the specifications, probably because it's optimized for photographic output. Budget more time than you would with a general-purpose inkjet, if you're planning to print text documents on this model. In our tests, the Stylus Photo 960 achieved speeds of 2.3 ppm (pages per minute) in best quality mode and about 8 ppm in draft black text mode.

Since the other photo printers in this list all feature digital camera card slots, it's worth mentioning that the Stylus Photo 960 doesn't. But it's hard to set that as a serious flaw, considering all of its other standard features. The printer comes with Epson Film Factory and a Print Image Matching plug-in for Photoshop.

Hewlett-Packard PhotoSmart 7300

From: Hewlett-Packard Co., www.hp.com
Suggested price: \$300

Cartridge cost: \$14 black, \$16 colour, \$10 photo

Pro: Excellent photo output. Fast printing from your photo card. Relatively inexpensive.
Con: PC-free printing requires a lot of button-pushing. Slowest output. 100% conversion only. Small output tray.

Hewlett-Packard's PhotoSmart 7350 printer is designed to be your digital photo companion, whether you have a PC or not. Though it's designed to be extra compatible with your HP camera (it has a USB jack on the front), the card slots on the front mean the 7350 will print your pictures no matter which digital camera you use, as long as it has removable storage.

Printing directly from digital camera media was relatively easy to figure out, though tedious with a high-capacity card. We inserted an IBM microdrive with nearly 100 pictures on it and it saw all the images fairly quickly and printed

out a handy index print. However, selecting the appropriate ones for printing involved a lot of button pushing. Those with smaller memory cards will fare much better; admittedly the prints were top-notch, but the printing was slow. Those who prefer to edit pictures first or select prints on the PC can use the onboard card slots as a USB card reader instead and transfer the pictures to the PC first.

While the printer features a fairly straightforward design, a few elements raised our eyebrows. First, the photo tray slides on the paper output area is somewhat confusing; it's associated with a small flip-up door that allows you to load photo-sized paper into the tray without having to lift the tray up, but if you forget to raise the slider back (which is easy to do) the printer gives you an error message.

Most problematic is the speed of non-photo output. In our tests, it achieved speeds of 5 ppm in normal quality black text mode, about 10 ppm in draft mode, and it took about 45 seconds for the first page to hit the output tray. Not the slowest we've seen, but still not that great. There was also some bleeding on standard bond paper, even at best quality, which means you'll want to use photo-quality inkjet paper if you're printing high-quality text for presentation purposes.

Ultimately, this printer makes a very good choice for those who want the flexibility of printing without a PC or who want to be able to transfer pictures back to a PC. Those looking for a general-purpose printer with reasonably fast output may want to look elsewhere.

Lexmark 265p

From: Lexmark, www.lexmark.com/canada
Suggested price: \$149

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Cartridge cost: \$52 black, \$68 colour

HP's facsimile output quality and reader component allows you to transfer digital camera images to PC, two paper input trays.

Can't print directly from your device? Small, limited retail availability. No this device USB connection only to PC.

Lexmark was the first of the consumer printer manufacturers to realize that printers and digital cameras went hand in hand—even when there wasn't a computer around—with the debut of the 5770. That model was not only a fully functional inkjet printer, it also had a card slot that allowed you to print directly from digital camera media. While other manufacturers jumped on the trend, Lexmark has more recently

remained low-profile with that type of device. The 265p is the company's re-entry into this category, though it should be noted that it's not a PC-free solution. The onboard card slots are designed strictly as a method of getting data from your memory cards back to the PC. The good news is that it's less expensive than the printers that feature PC-free printing.

Because it uses the Z65 engine, the 265p has the same high-quality output as the Z65 and the Z60e, as well as the same speed (31 to 13 ppm in black draft mode and 8 ppm in normal mode in our tests) and general design (it has the two input trays and the same fold-down paper supports). Beyond the card slots,

much of the difference with the Z65p resides in its software bundle: it ships with Adobe's Photoshop, which allows you to manage images on your memory card and automatically transfer them to your hard drive whenever a card is inserted.

We have the same problem with the use of the "discreet" "3.5" support" on the packaging for the Z65p as we do for the Z65e, but it's especially frustrating for a printer designed as a companion for digital photography and digital camera media: it's just not the proper term when you're putting dots onto paper.

Also, the lack of Mac compatibility is puzzling, considering Lexmark's recent push back into the Mac world with its

inkjet line. We were actually able to track our Mac into printing on the Z65p using the driver for the Z65, but the digital media slots were unresponsive. (Hint: a Mac driver is written to make use of those slots; you can save yourself some money and go for the base Z65 model.) If you wanted to jack this model up, your options are somewhat limited. As with all Lexmark products, you can order them from the company's online store, but it will cost you slightly more than getting it in a retail outlet.

The only retailer carrying this model right now is Future Shop, so if you're not in a major centre with a Future Shop location, you'll have to pay shipping as well. ☐

General purpose inkjet deliver

Continued from page 42

the natural (and pretty simple even without it). What you'll notice first though, is the design of the printer. HP has been going out of its way to add a touch of flair to its desktop inkjet line, and this one looks more like a flying saucer than a printer. One complaint, despite the futuristic design, HP has

stack with its small paper input tray. It's not a huge issue, it just means you have to reload your paper more often if you plan to print in volume.

Though there are only two cartridge slots onboard, the printer ships with three: black, colour, and photo, which you use in pairs (black/colour or colour/photo). The printed output was excellent in general, though you'll

achieve best photographic output if you use the photo cartridge. One nice feature with this, as with other recent HP inkjets, is the printer's ability to detect the type of paper you're loaded and optimize the printing accordingly.

The only real complaint we have is that the Desktop 5590 can sometimes take up to 34 seconds before it even starts to print. Once it gets going, the

speed is about on par with other models in terms of actual performance.

Lexmark Z65e

Free (retail), www.lexmark.com/canada/

Formatted price: \$219

Cartridge cost: \$52 black, \$68 colour

Free facsimile output quality. Networking capability allows you to share paper among several computers.

Continued on page 50

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Inside the box: TCP Lab looks at internal drives

By Sam Corliss

Back on our January 2000 issue, we took a look at a few external storage options. Despite their convenience and easy installation, some aren't simply used as a new external hard drive—their boot drive is just too small (a lot of systems that are just a few years old have a boot drive of 4 GB or less), or, failing, or maybe they want to set up a RAID array for maximum data protection. The good news is that external drives are still the most widely available form of hard drive, and they're still a lot cheaper than the external versions, thanks to their competitors and the fact that no IDE-to-USB/FireWire interface hardware is needed.

A few things to keep in mind when selecting a new internal hard drive:

- Pay attention to the interface specification of your motherboard when selecting a hard drive, especially if you already have other drives on your IDE chain. Mixing drives of different access speeds on the same chain doesn't always work, and may even cause seri-

ous data corruption. Most of the systems sold over the last couple of years have motherboards that sport ATA/100, and some of the brand new ones feature ATA/133. Even if you have ATA/133 on your board, you should be able to use an ATA/100 drive unless there's already an ATA/133 drive on the chain. You can also use ATA/133 drives with a motherboard that only has ATA/100, but you won't get the full data throughput rate the drives can theoretically achieve. Because Master is the only major manufacturer currently shipping drives with the ATA/133 spec, it probably won't be an issue for most users.

Those with older machines (three years or more) will want to pay special attention to the limitations of their motherboards. While the IDE connection on these boards may be the same, the motherboard's BIOS may have a cap on recognizable hard drive size (2 GB or 8 GB, for example). If this is the case, the system may not recognize a new hard drive at all if it exceeds the

BIOS's limitations. Some of these boards' BIOSes can be flash-upgraded to recognize higher-capacity drives, but in a lot of cases the only solution is a new motherboard—and that can often entail a lot of other expensive upgrades, like RAM, CPU, a power supply, or case. Do a bit of research or you may find yourself spending a lot more than you planned.

Even users with systems sporting newer motherboards can run into a capacity limitation because of the bandwidth of the bus on all motherboards. Thanks to this limitation, the size cap on hard drive size when they are plugged into the IDE port on most motherboards is 337 GB. Some of the boards feature IDE controllers that recognize even larger drives, but most users with a drive beyond that magic number will probably have to add an IDE host adapter card to one of the free IDE slots in their system. (Note this is one area in which you should really consider an external drive if an internal one's strictly necessary.

External versions of these drives have no such capacity cap.)

The legalese

We used the hard disk tests found in *Storage Lab* Inc.'s (www.storage-lab.com) WinBench99 2.0 benchmarking software. All testing was done independently and without verification from *Storage Lab* Inc., which makes no representations or warranties as to these results.

Testing was done on an Intel Celeron/300MHz motherboard, with a 333MHz Pentium 4 processor and 512 MB of PC166 SDRAM. For software, we installed our test with an older 30 GB IDEM Desktop drive, which managed the following PC Mark 99 scores:

PC Mark 99	330
Index	100
System	4,400
High End Disk Mark	11,700

IDE Decoder 1001

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Continued on page 64

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Samsung's SpinPoint series of hard drives may not gain a lot of attention when put up against all of the drives with special retail packaging, but thanks to the fact that they're still fine, they're typically less expensive. The SV1304H is part of the V10 series of SpinPoint drives, which says it has three 60 GB per platters; thus, the two-platter drive we had a chance to look at sports 120 GB.

We say fail-free because typically the drive don't come with the full retail box packaging, and Samsung's drives don't typically push the bleeding edge of the technology. Instead, they're basic value-priced offerings that give most users exactly what they need: a hard drive with enough space to fit a whole lot of digital photos, MP3 files, and the occasional video file.

Because the drive has a 5,400 rpm spindle speed, it falls in lower numbers than the faster Seagate drive, but that will only become an issue for users doing really demanding multimedia work. For the rest of us, this drive does the job just fine.

What's nice about the SpinPoint drive is that it's a touch quieter than the Seagate drive during read/write mode—a nice accomplishment when you consider that the low noise level is one of Seagate's big selling points.

Note: Currently this model is only sold in the U.S. However, at press time a representative of Samsung Electronics Canada said he expects the SP-1304H (a 7,200 rpm, 120 GB drive) will be available here by the time that issue hits the streets for a suggested retail price of \$349.99.

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Elegant PowerBook bulks up to accommodate 17-inch display



APPLE NEWS

W e're back from Macworld Expo in San Francisco, and as usual Apple got on quite a show for its devoted users. More than 60,000 people attended the San Francisco show this year, and the keynote address from Apple chief Steve Jobs was one of the best in recent memory. There were so many new products announced that Jobs started out by saying that he had enough for two Macworlds. There was so much to cover that it's going to be hard to touch on it all, so let's get straight to the new hardware.

The one thing we were not expecting was a beefing up of the PowerBook line. Both portable lines, PowerBook G4s and iBooks, were updated in November, so January seemed ripe for the introduction of new iMac and iMac, or maybe iPods. The introduction of more new laptops so soon is indicative of a new strategy from Apple that could spread across the industry over the next few years.

Laptops are now fast enough to replace the desktop computers of most users, but the final barrier to widespread adoption had been that they were more expensive



and not as full featured. A new PowerBook, though, now has the same ports as a desktop G4, and since Apple cut laptop prices in November, they are more closely in line with the cost of a desktop.

With the introduction of two new PowerBooks, Apple now offers seven (three iBooks and four PowerBooks) portable models. The 12-inch PowerBook is the smallest Apple laptop to date— even smaller than the old PowerBook Duo. It weighs in at only 2.07 kg (4.6 lb.), and is slightly smaller in every dimension than a 12-inch iBook. The 17-inch PowerBook,

on the other hand, boasts the largest screen in the industry, a widescreen LCD with a 34.10 aspect ratio. We had a chance to use both at the show and here's where we stand from that first impression.

The 17-inch PowerBook gets all the bells and whistles the Cupertino crew has been working on for the last 12 months. This includes things that have never been in any Mac before: built-in Bluetooth, 54 Mbps Airport Extreme, an aluminum anodized case, FireWire 800, and a very cool backlit keyboard. Currently, this

Continued on page 60

Apple upgrades and improves integration of iApp suite

By Julie Stenman

Though we started with a roundup of the new hardware, Apple chief Steve Jobs began his Macworld keynote by outlining the updates to Apple's iApps before the Expo, many predicted that Apple would introduce a fee for all the iApp upgrades, including iMovie and iPhoto. Luckily, that didn't happen. Instead, Jobs announced the Jan. 25 release of iMovie 3.0, iPhoto 2.0, and iDVD 3.0, which form the new-line suite with iTunes 3.0. (Note: As IXP went to press, Apple had pushed the release date to Jan. 31. No reason was given, but the upgrades are expected to be available by

the time you read this.)

The iLife suite is USB20, but the individual components can be downloaded for free—with the exception of the iDVD upgrade. This seems fine as there has always been a charge for iDVD upgrades and it's far too large to download (well over 1 GB). Apple used to sell an iDVD 2 upgrade for US\$20, but it was only available from the Apple Store, so making it a retail product will help get it into the hands of more Mac owners.

Key features of the suite suite involve the interaction between the programs. In any of the applications, for example, you can click up your iTunes library search for a song, and insert it directly into a proj-



ect without having to open iTunes. Likewise, your iPhoto library is available in iMovie and iDVD without having to open iPhoto. Besides better integration, each program has a number of new features and fixes. Here's a rundown of what's new.

Continued on page 71

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Elegant Powerbook bulks up

Continued from page 57

model has a number of features not available on the 12-inch or 15-inch PowerBooks, which makes it a great value if you can get over the size.

When closed, the 13-inch is a full 5 cm (2 in.) wider than the original PowerBook model, and almost 7.5 cm (3 in.) deeper. It's also more than 450 g (1 lb.) heavier, weighing in at 3.06 kg (6.8 lb.). The feel when it's on your lap is a lot more bulky, although it's not as heavy as it looks. The key market for the 13-inch seems to be those who want a desktop computer that can be moved when necessary, not a portable that can be taken everywhere.

Its specs are similar to the 15-inch model, and considering how large the screen is, the price is quite low. For \$5,299 you get a 1 GHz G4 processor, 8 MB Level-3 cache, 10/100/1000 Ethernet, and 512 MB DDR 2700 RAM (4 GB in an Apple laptop). A 64 MB hard drive is standard, as is a CD-RW/DVD-R SuperDrive, and a new 34-MHz Airport Extreme card. It uses the same LCD as the 17-inch iMac and has a resolution of 1,440x900.

The display is driven by an Nvidia GeForce 4a graphics chip, which is similar to the GeForce 4MX used in the 12-inch iMac. We find it odd, though, that the 15-inch, which is cheaper, uses the faster ATI Radeon Mobility 9000 card. Although the GeForce 4a is no slouch, and it does include 64 MB VRAM plus a DVI slot, it's still not going to be as fast as the 1.6 GHz 20-inch model with a 64-MB Radeon Mobility 9000.

Other than the odd choice of graphics cards, and the size and weight, the 13-

inch PowerBook looks to be a huge hit. With its new architecture using a 147-MHz system bus and DDR 2700 RAM, it's bound to be faster than the 1 GHz 15-inch model, and for only \$500 more than the original price of that machine just three months ago.

With the larger screen, Bluetooth, Airport Extreme, and built-in keyboard, you'd expect battery life to suffer, but Apple has managed to squeeze 4.5 hours out of a new lithium-ion (manganese battery—another first: What else is notable about this machine? The aircraft-grade aluminum case is anodized, not painted so it won't chip or peel like the 15-inch Titanium) has tended to do.

Also, in addition to the new PowerBook 800, it has a regular PowerBook 400 port making it the first PowerBook since the G3 PowerBook to have two built-in FireWire ports. The new Airport Extreme now contains two antennas, one on each side of the screen, so reception is much improved. Lastly, the built-in keyboard is an amazing piece of work, using two ambient light sensors to automatically dim the main display at the same time it brings up the keyboard light. The new keys are painted silver and the key caps laser etched, so the backlight illuminates the letter on the key and the outline between adjacent keys.

If you want a PowerBook to use on the road a lot and carry with you everywhere, you'll probably want to look at a 12-inch or 15-inch model. But if you want a desktop replacement, the 17-inch is the way to go. We expect that in the next six months the current Titanium G4 will be replaced with some of these new tech-

nologies and a new aluminum case.

Powerbook G4 12-inch

We were very excited with the announcement of the 12-inch PowerBook, but upon closer inspection it seems more like a G4 slouch than a true PowerBook. It is great, however, that Apple is re-emerging the sub-notebook market that was last served by the PowerBook 2400.

The 12-inch PowerBook has the same anodized aluminum case as the 17-inch PowerBook, as well as Airport Extreme and built-in Bluetooth, but that's where the similarities end. It has what appears to be the same screen as a 12.3-inch iBook, although at the show it looked brighter than most iBooks we've seen, so it may be a higher quality unit. Also, it lacks the built-in keyboard and FireWire 800.

Its ports include one FireWire 400, two USB 10/100 Ethernet ports (also gigabit), a 54Mbps modem, and an AV port that supports VGA or S-video out. It has no PC Card slot, which is something every PowerBook since the 5400 has featured, and it also doesn't support DVD out, so there's no way to see it with an Apple flat-panel display. It does support video spanning, which is something the iBook doesn't, but without DVD it seems like a waste.

The maximum RAM in a 12-inch PowerBook is 540 MB, once again the same as an iBook. All other current PowerBooks support up to 1 GB of RAM, a much more reasonable limit, especially considering these new machines will only run 25.5 K. The 12-inch PowerBook does have a start-loading Combo drive, and a SuperDrive is available as a build-to-order


option for an extra \$320. The standard configuration is \$2,899 and includes an 867 MHz G4 with no Level-3 cache (a big mobile performance win), 256 MB DDR 2100 RAM, 40 GB hard disk, 32-MB GeForce 4a graphics chip, and built-in Bluetooth. You can install a new Airport Extreme card, but it's not included.

When you upgrade the RAM by adding a 256 or 512 MB chip, you have to throw away a 128-MB chip in the process. Why not just include 256 MB on board in the first place with one empty slot? The 12-inch gets it right by including one 512-MB chip and one empty slot. Other details like this better us, especially since no other Mac uses DDR 1000 SDRAM and every single 12-inch PowerBook includes one, so there will be almost no way to get rid of it when you upgrade. Also, the lack of a Level-3 cache makes this system a lot slower than the 867 MHz 15-inch Titanium PowerBook, and in early benchmarks it looks like it might be only slightly faster than an 800 MHz G3 iBook.

On the whole, if Apple was selling this as a G4 iBook we would have no complaints, but it looks like it couldn't be an iBook price point, so had to be called a PowerBook. In the end, it stands the test between the two without being perfect for either market. In about a year's time, expect the G4 iBook to be replaced with something similar to this, and the 12-inch PowerBook to be joined up with better performance and maybe some other high-end features like FireWire 800 and gigabit Ethernet.


We are sad to see this PowerBook not live up to performance expectations.

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Original Powerbook 1600

Continued from page 66

because it's every other year's perfect. At just 2.07 kg (4.6 lb), it's almost 225 g (8.5 lb.) lighter than a 15-inch sleeker and is smaller than the iBook in every dimension, measuring 362.7x213.9 on when closed.

Both new Powerbooks have a new keyboard design that feels more solid, because the keyboard no longer lifts up for installing RAM. The track pad is small on the 12-inch, but still usable, and the speakers are on the back side of the machine. They fire directly into the screen and the sound is reflected back at the user. We thought the sound quality was remarkably good considering—better

than the speakers on the 15-inch, though they don't seem to play as loud.

In all fairness, the 12-inch Powerbook 64 is not bad, it just could have been a better machine with a few more tweaks. No doubt the next revision will address some of our complaints. In the meantime, it looks like Apple has succeeded in making a laptop for every possible user.

The 12-inch Powerbook will be in Canadian stores by press time, with the 12-inch model expected to hit retail shelves by the middle of February.

Apple unveils Mac-ready multifunction

Equally multifunctional devices—which can incorporate print, scan, photocopy and fax functions—for the Mac are a bad

thing. Either the drivers never work properly or the results are not as good as those of standalone printers or scanners. (Scan is cheating per perspective in the product category with the impressive Stylus C8200, which was on display at Macworld.) The device—which prints, scans, and makes copies—has just been introduced in the U.S., and should be out in Canada by the time you read this.

It combines the print engine from the very capable Stylus C82 with the scan engine from the Perfection 1250. The result is an all-in-one that works natively in Mac OS 9 and OS X and delivers above-average print and scan quality. The ink tanks are the same as those used in the C82, which means they should be easily available. It also makes the C5200 users' new iPhoto ink with additional tricks for each colour. Lower and lighter prices tend to use one three-colour cartridge, which means the whole thing has to be replaced when only one colour runs dry—a costly and wasteful solution. Apple claims its DualBrite ink is fade resistant for up to 70 years on plain paper (80 years on special photo paper) and also water resistant, unlike its lower-end

C82 and Photo 820 printers. The printer is capable of handling up to legal size sheets of paper, and can do borderless printing (for 4x6-inch prints only).

The scanner has 1,024x4,000 dpi resolution at 48-bit colour and can scan up to 8.5x11.7-inch sheets. It can be used as a standalone or to scan directly into iPhoto using the iScan Direct plug-in. The scan engine can also be used to make PC from colour or black and white copies. Apple says it can generate 15 copies per minute of a page with black text. While not the machine for high-volume jobs, it would be serviceable for those with occasional small batch copying needs, who can't afford a separate photocopier.

The C5200 lists for US\$599, and should sell for just over \$480 where it is available here in early February.

The value on this unit is great, considering that a Stylus C82 prints 9x16 for \$240 and a Perfection 1250 scanner lists at \$130. If you're looking for a new printer and scanner, this is the first all-in-one for the Mac that looks like it's really going to deliver and at a reasonable price to boot.

Josh Sorenson is a Macworld-based Mac specialist. He can be reached at james@jmac.com.

Inside the box

Continued from page 66

is the company's newest DVD recordable solution, and is before Powerit is focusing heavily on the compatibility between its recordable solution and DVD Video. That's not to say that the drive isn't a good solution for data storage, though. It comes with a good software bundle allowing it to be used for both video and

data applications.

Setup was fairly easy on our XP box, and before long we were burning both CD and DVD media. Even better, the Powerit drive is able to burn DVD-R at 4X, nearly twice the speed of its nearest competitor. The big downside here is that the drive will only burn DVD-RAM, DVD-R or DVD+RW media, like some of the other drives. □

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T is for Tungsten

By David Tanaka

The Tungsten T is the best Palm OS I should clarify that—it's the best Palm made by Palm Inc. Sony has pushed the boundaries of the Palm platform more than any other hardware vendor, and a new OS based on Palm OS 5.0 promises to eclipse the Tungsten T in many ways. But to its credit, Palm has revised its hardware platform with a new processor and a new OS to deliver the goods that the flesh-ease design promises. The Tungsten addresses many of the limitations of previous models, while retaining the simple, direct interface that Palm users have come to expect.



Palm Tungsten T

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The big hardware improvements derive from processor, both in audio, and higher-end screen. New OS addresses many of the limitations of previous models, while retaining the simple, direct interface that Palm users have come to expect.

Eye Eye Dragonball

Previous PalmOS used the venerable Motorola Dragonball 9688 processor, but Palm OS 5.0 is designed for ARM processors, which the Tungsten T uses: a Texas Instruments OMAP 1550 with a 144-MHz clock speed. The extra oomph will be put to good use servicing the revamped OS's audio and wireless capabilities and higher resolution display.

Palm made efficient use of the 160x160-pixel screen on previous models, and the icons have been reinforced with an oblique 3D effect but still retain enough of the original look to be immediately recognizable to anyone who's used a Palm. The overall appearance of the interface is improved by the new 160x160-pixel reflective TFT screen, which supports up to 45,000 colours to allow better shading and finer graphics. It also shows colour photos better. One of the applications included with the Tungsten is a digital photo viewer from Acciell called PhotoView.

The front lighting on the screen works very well, but even without it, the screen is visible in bright office light, although the colours are muted to the point that the display appears almost monochrome. One of the benefits of reflective TFT is that it gets brighter as the ambient light levels increase, so outdoors where other colour screens would wash out, the Tungsten's display just gets better.

The Tungsten also has audio record and playback capability. It comes with a stereo earphone jack and built-in microphone and voice memo recorder functions. Surprisingly, however, there is no MP3 or other multimedia plays, although Palm is apparently working with RealNetworks on a player for RealAudio and MP3 formats.

The Tungsten is equipped with a SecureDigital Card slot, so it certainly has the capability to store a small music library.

Hello Bluetooth

Bluetooth theory is native to the Tungsten, and BlueChat, Bluetooth and Collage Meeting software ship in the box. Collage is a group calendar, which will find common calendar data blocks for a group of Bluetooth-connected devices. BlueChat allows instant chat with other Bluetooth-enabled Palms; and BlueBoard is an electronic whiteboard tool that allows a group of users to collaborate—what one person draws on screen is seen on the screens of everyone else in the Bluetooth group—using up to four colours.

We tested these applications with a second Tungsten, and then in Bluetooth as should be. It was a snap for the Palms to establish contact, and the software worked very well. The chat and whiteboard applications worked so well that we'd have ODS where you see your mirrors busily scribbling on their Palms, you might want to check that they're actually taking notes on your pearls of wisdom, and not playing hangman or tic-tac-toe across the table, or chaffing about last night's hockey game.

We also had an opportunity to use the Tungsten with a Sony Ericsson T660 Bluetooth phone. We managed to set it up and dial out on the phone using the Palm's optional dialer utility, but it wasn't as clean a process as getting two Palms talking.

The telescoping case

The case is built in two sections, which

separate by about 2.5 cm (0.9 in.) when you pull the lower and upper sections apart. When closed, you see the screen and a button cluster beneath it. Replacing the top and down buttons on previous Palms is a four-way circular rocker with an Enter button in the middle and flanked by two buttons on either side to launch the calendar, address, to-do, and notes applications.

When the case is extended, the former Griffith character input area and soft buttons are exposed. We've seen a Sharp Zaurus Linux-powered PDA that uses a similar telescoping case design, but on the Sharp, a thumb keyboard is situated in the same area as the Tungsten's Griffith area, so we wouldn't be surprised to see keyboard-based T's some day. Palm has announced the Tungsten II, which incorporates a cellular phone and a new keyboard, but it will use Palm OS 4.0 and shares little design-wise with the Tungsten T.

Conclusions

The Tungsten is what Palm needs to get its handheld platform back in the game, and apparently it has been somewhat successful in doing just that. In mid-October, Palm announced its latest quarterly financial results, reporting revenue of \$55.24 million for the fiscal quarter ending Nov. 20.

Though nine percent lower than the same quarter a year earlier, it was 54 percent higher than the previous quarter. Palm chief executive, Eric Benhamer, attributed the improved quarterly performance to the launch of the Tungsten T and low-end Zins, as well as the introduction of Palm OS 5.0. □

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Stylus 2200 a printmaker's printer

By David Tanaka

The Stylus Photo 2200 sits at the top of Epson's desktop photo printer line, and distinguishes itself from other inks in a number of ways. It uses pigment-based inks instead of dyes (and seven colours instead of the typical six), it is a tabloid printer, capable of printing images up to 13x19 inches, it comes with a paper roll holder and a cutter, and has three interfaces: parallel, USB 2.0, and FireWire.



Epson Stylus Photo 2200

From Epson Canada, www.epson.com
 Printer price: \$1,000 (street), \$520 (ink included)
 Price: Outstanding print quality, individual ink cartridges for each colour. Support for high-quality, professional in the form of colour profiles for individual papers. A 75-year rating for print permanence.

Canon: Slow compared to the latest Canon and Hewlett-Packard tabloid printers, and more expensive.

Ink resistance in decades, a big step forward, and they are also water resistant.

But up to now, pigment-based inks had a major disadvantage—their range of colours was always narrower than that of dyes, so prints from pigment inks tended to be duller and muddier.

However, from what I've seen of Epson's new formulations of pigment inks, called UltraChrome, the colour disadvantage is essentially eliminated. There is some debate on photo enthusiasts about whether the 2200 is as good as the best dye-based photo printers. The fact that such arguments are even taking place indicates that Epson's new pigment inks are very close to, if not on par with, dyes. In my opinion, the quality is there in spades: the output is comparable to the best tabloid printer I looked at, the very fine Canon 9900.

Part of the 2200's quality comes from the fact that it prints with seven colours. It uses the six colours employed by other photo inkjet printers—cyan, magenta, yellow, and black, plus a light cyan and light magenta—as well as throwing in another, lighter black. Just as the light

cyan and light magenta inks allow photo printers to reproduce subtle variations in hue, the second grey ink enhances the reproduction of shadows, as well as improving the quality of black and white printing.

One additional ink innovation is that Epson offers two types of black cartridges—regular photo black for glossy papers and matte black for papers with flat finishes.

Out of the box

Being a tabloid printer, the Stylus Photo 2200 is quite hefty but even so, the box it ships in is unusually big because the printer also comes with a paper roll holder, an automatic paper cutter and even a cloth holder that catches the prints as they are cut off the roll.

Basic setup is pretty much the same as any other printer—load the printer driver (Windows and Mac OS are supported), install the cartridges and plug in the cables (we used the FireWire connection).

Continued on page 78

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< NEW & NOTABLE >

Making taxes less taxing

By Sharlene Myers

Now that we're all using computers to edit pictures, make videos, and listen to music, it's easy to forget some of the PCs' less glamorous applications, like preparing taxes. Using a tax software package or online service to prepare and even file tax returns can save hours of calculation time and weeks of waiting for refunds.

Netfile, the Canadian Customs and Revenue Agency's (CRA) online tax filing service, is available to most individuals now, and a comparable service for those filing returns for incorporated companies is available on a limited basis this year. Filing online generally means the refund cheque arrives sooner, and the process is less prone to errors that could cause delays.

Asking personal questions

Software and services for filing personal income tax returns are the most plentiful and competitive. Online services are

usually less expensive for those preparing only one or two returns (provided they're apportioned returns), but don't include the extra tools and publications the software packages have.

The biggest player in the installed tax software realm remains QuickTax (www.quicktax.ca), with new specialized packages for investors, small business owners, and those planning for retirement, in addition to its Standard package. Those who can't decide can get all of them bundled together in QuickTax Platinum.

All of the packages allow preparation of up to six returns, plus an unlimited number of returns with net incomes under \$25,000. The Standard Edition is \$99.95 each, the Platinum Edition is \$199.95, and the Standard version is \$19.95 after a \$30 mail-in rebate.

QuickTax offers an online tax filing service as well, the front page of which advertises that "If you don't get a refund with QuickTaxWeb, it's free!"

Continued on page B7

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Bridging the accessibility gap

Techniques for making Web sites more welcoming to visual, hearing impaired visitors

By Todd Cooper and Jeff Horne

As a Web site manager—regardless of your Web site's goals or its intended audience—the importance of understanding and implementing Web accessibility techniques is critical to maintaining a successful online presence. As discussed in the first part of this series of articles on Web accessibility (see "Web accessibility goes mainstream," TCP February), integrating accessibility techniques into a Web site has numerous advantages: increased audience loyalty among visitors, perception of being forward-thinking, decreased legal liability, and the potential for a positive impact on the bottom line.

This installment focuses on some simple coding techniques that should be considered during the planning and implementation of a Web project, inspired by the Web Content



Roughly one in 12 men suffer from some degree of colour vision deficiency. This type of impairment can make darkly coloured text displayed on a darkly coloured background difficult to read.

Accessibility Guidelines—developed in part of the Web Accessibility Initiative of the World Wide Web Consortium

(W3C), the governing body of the Internet—we focus on five of the most commonly used Web site elements:

images, colours, hypertext links, tables, and multimedia. By paying extra attention to these areas, Web site managers will ensure that information on their sites is truly accessible to the masses—regardless of the type of user agent or assistive device.

Images and animations

Ask any graphic designer and they'll agree that the adage "a picture speaks a thousand words" is nowhere more applicable than on the Internet and the World Wide Web. As a visual medium, the Web implies and even demands the extensive use of photos, illustrations, and screenshots of imagery to convey meaning and branding as well as product and service offerings.

Unfortunately, the wholesale use of imagery on a Web site may also present a host of problems to users accessing Web

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Bridging the accessibility gap

Continued from page A2

are. Unfortunately, HTML tables designed without accessibility in mind can result in a mish-mash of incomprehensible rows and columns for users employing assistive technologies.

To avoid this potential quagmire, several HTML elements and attributes can be used by Web developers.

For example, the SUMMARY attribute, when used as part of the TABLE element, can provide a detailed description of the contents of a data table. The SUMMARY attribute can be complemented with the CAPTION element to give a brief description or title for a data table.

In addition to providing data table descriptions, it is important to identify row and column headers. You can be implemented by using the TH tag to identify column headers in combination with the HEADERS and ID attributes. Using this methodology, each column heading is assigned an ID, which is referenced by each column cell using HEADERS.

The following example illustrates all of these elements:

<table border="1" summary="This table shows

the number of downloads for this Web page based on the type of browser">

<caption>Page downloaded by browser</caption>

<tr>

<th id="header1">Browser Type</th>

<th id="header2">Number of

Downloads</th>

<tr>

<td header="header">Netscape

Navigator</td>

<td header="header">13,42</td>

</tr>

</table>

The table snippet would be quite accessible to a visually impaired individual. Speech synthesizer software would first read the caption, followed by the summary, and then each column value would be read preceded by the column name.

Multimedia

Audio and video are commonplace on the Web today. More and more Web users are taking advantage of high-speed, high-bandwidth Internet connections. In Canada, the National Broadband Task Force estimates that 20 percent of all

Canadian communication have access to high-speed Internet connections. Watching sports highlights on popular sports Web sites, tuning in to a news Web site for an up-to-the-minute update, or listening to a live radio broadcast are all common activities for the average Web user.

For the disabled, restricting the multimedia means can be much more frustrating—unless Web site owners take a few simple steps to make their multimedia components more accessible. The good news? All three of the popular streaming media players (Microsoft's Windows Media Player, RealNetworks Real Player, and Apple's QuickTime Player) come automatically equipped to support the creation and distribution of accessible multimedia. For example, all three players provide native captioning support for the deaf.

Even Macromedia Flash technology has gotten in on the act. Long criticized by accessibility gurus, the latest release of Flash MX has an integrated captioning tool. Through the use of a freebase captioning application like MACFlix (www.mh.com/flash/mh/macflix/), programmers can create text files in XML

format, which can be integrated into Flash and used for captioning.

Mainstream accessibility

Web accessibility has hit the mainstream. The federal governments in Canada and the U.S. have developed policies on the issue, and the depth and availability of information on the topic is ever expanding. The issues we've discussed in this article are but a small subset of the full accessibility guidelines published by the Web Accessibility Initiative of the W3C. Becoming familiar with the W3C's ongoing work and implementing accessibility techniques throughout all stages of Web development will ensure success with any online presence.

Part 3 of this series on Web site accessibility will focus on assistive technologies and how they interact with site content—with and without proper accessibility techniques in place. □
Toni Cooper and Jeff Horne are principal at Industrial Media Inc. (www.industrialmedia.ca) and specialize in building online presence for organizations in public, private, and not-for-profit sectors. Jeff can be reached at jhorne@industrialmedia.ca and Toni at tcooper@industrialmedia.ca.

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In review: Mac OS X for Unix geeks, XML for managers

Power users would be better target for Unix/OS X guide



This slim little book is aimed primarily at Unix developers (rather than Unix users) who are interested in creating programs that utilize the BSD Unix core at the heart of Mac OS X. That said, the audience for the book is limited to those people who are interested in actively writing programs or porting existing Unix applications to the Mac platform, which is a pity since there are the makings of some interesting stuff for would-be power users.

After they enter OS X's terminal program, experienced Unix users will soon realize that the environment isn't quite what they'd expected.

A number of familiar commands don't work, some others don't perform the same way, and many new commands are poorly documented.

The first couple of chapters will be of

general interest to OS X power users; they talk at length about how to work the terminal application and optimize it to your work habits, and how OS X's start-up sequence works, followed by exactly how OS X boots up what services it launches, and more importantly how to modify them.

From that point, the authors get into the gritty-gitty of program development, showing you how to build applications, providing a rough breakdown on using and creating library functions, and installing development tools on your Mac. The rest of the book looks at the Darwin kernel, system tools, and how to get X Windows to work alongside the Aqua interface. The rest of the book is devoted to appendices covering OS X's file system and the naming languages (i.e., descriptions) for the many command-line options whose functions are not described.

There's a lot of info here that would appeal to OS X power users. In a way, it's a shame that this book is aimed at the developer rather than the moderate to advanced OS X user implied by the title. The book also shows signs of being outdated: there are a number of types and some of the information related to OS 10.2 (Jaguar) is incorrect—likely the effect of last-minute changes to the final release of the OS upgrade.

A good book, but I couldn't help thinking that with a little more information, it could've been much better. I see this as a missed opportunity to provide power users with the necessary tools to get the most out of OS X. And who says a Unix geek has to be a developer? >

Guide seems to ask "Axe manager's the new dummies?"



It was hard not to think of Miller's previously claims, pointy-haired boss when I recognized the point of this book.

It was not, as I had first thought, a book showing informed managers how to direct XML-based projects effectively; it's more an explanation of what XML (pronounced: [ah]gah-ay) actually is. Ultimately, it's intended for people who need to know what their IT people are talking about when they want to convert corporate data structures to XML. Whatever its intent, it serves as a decent primer on XML.

In a nutshell, XML is a system that lets you incorporate your data using HTML-like tags that you construct.

It's a way to better organize corporate data so it can be easily transferred from system to system.

This book provides enough on XML fun-

damentals for readers to understand how it works, and then goes on to pitch how XML can be used in an organization effectively.

Unlike the *For Dummies* series, this guide does not take a hands-on approach to its topic as it doesn't assume readers will actually be working directly on XML code. Instead, it gives them a better understanding of what XML is and how it can best be used.

It is divided up into sections that provide the fundamentals of XML, look at related technologies, and then at how it has been typically used for such things as messaging, Web services, and enterprise and vendor applications.

Each section is clearly written, with executive summaries beginning each chapter, and the main point of each subsequent paragraph in the chapter summarized in the margins in blue.

By skimming this blue text, readers could get the gist of a chapter in minutes, re-reading the section in more depth later.

The book provides enough information to give an IT manager an idea of what XML can do for their organization, so it does exactly what it sets out to do. I hesitate to rate this book too highly, however, as I wonder how well a subject as technical as XML can be understood without hands-on experience.

Miller's pointy-haired boss notwithstanding, there is definitely a need for books that provide a good overview of a technical topic such as this.

—Keith Schreible-Roberts

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is also geared more directly to business owners than the interview in the basic package. The included Incorporation Analysis can help proprietors consider whether or not they would be better served by incorporating.

For incorporated businesses, which are required to file T2 forms, there are a few options. QuickTax T2 for Incorporated Business offers all the features available in the Custom Editions for \$99.95, and will let users prepare not corporate and as personal returns.

CanTax (www.can-tax.com), which was a pioneer in the individual tax software market when it launched its first personal tax package in 1985, has for the last few years focused on professional tax software, and offers CanTax T2, which can process their corporate returns, for \$199.

Golden Griffin & Associates takes things for Mac users one step further, with GrifTax T2 2004, available from com-

puter and software retailers or the company's Web site for \$125. That price includes three returns; additional returns are \$30 each.

The CRA has introduced a limited program, similar to Netfile, that allows corporate returns to be filed electronically. As the program has only been running since October, not all corporations will be eligible to participate—the agency is limiting invitations to a limited number of participants that meet its eligibility requirements.

More information about Corporate Internet Filing is available at www.cra.ca/corporation-rtrn, including a list of certified software packages. GrifTax is on the list, but unfortunately, at press time (mid-January), the other listed products were designed for tax professionals and would likely be either too complex or too expensive for most small business owners. More products may be added to the list as the deadline approaches. □

Tax package still has life after April

Intuit has added three new editions to its popular line of QuickTax software this year, with tools for those with specific financial concerns that affect their tax situations. QuickTax for Retirement Planning, QuickTax for Small Business, and QuickTax for Investors. Each package includes QuickTax Standard and is priced at \$39.95.

It is easy to imagine, however, that many of those planning for retirement may also be investors, or that small business owners may wish to plan for retirement as well. So Intuit has also bundled all three packages together in the form of QuickTax Platinum. If you're not sure you need the tools from more than one Custom



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Information

Sliding PC sales slowing

It's been a tough couple of years for the Canadian PC market, and the latest data from IDC Canada shows shipments are still in decline—although there are signs that the worst is over.

Although the results are preliminary, IDC Canada reports that PC shipments in Canada for the fourth quarter of 2002 showed the seventh straight year-over-year quarterly decline, falling 3.8 percent compared to Q4 2001. That translates to 828,560 PCs for the quarter. For the year, total PC shipments were down 3.6 percent compared to the previous year.

Net bad, compared to a seven percent decline in 2001 over 2000.

One category showing exceptional performance was notebook PCs, whose quarterly shipments grew 10.4 percent year-over-year (consumer-branded notebooks showed a nearly 22 percent gain). However, desktop PC shipments fell 2.1 percent led by an almost 26 percent decline in consumer-branded desktops. That's a clear shift to notebook forms in

the consumer-branded products.

The top five brand-name computers in Canada in order of Q4 market share were Dell, Hewlett-Packard (including Compaq brands), IBM, Toshiba, and Apple. Interestingly the "others" (everyone else selling PCs in Canada) still have a 38.5 percent market share which translates into 543,900 PCs.

Toshiba sells only notebooks in Canada, and managed to take 24.2 percent of the notebook market for the quarter, for 4.9 percent of the total PC pie. Apple Canada had a good quarter, growing 15.5 percent year over year. Its com-

mercial notebook line grew about 24 percent, enough to give it a 3.1 percent overall market share.

IDC's business class penetration showed in its market share: its business-brand desktops and notebooks grew 15.9 percent and 3.9 percent, but its consumer lines took a doubling down 84.3 percent (desktops) and 48.5 percent (notebooks), according to IDC. HP and IBM showed year over year declines in market share. The others grew, led by Toshiba, up almost 53 percent year over year.

—TIP Staff

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Books for budding roboters

By David Tanaka

Hobby robotics are hot. If you don't have the skill or inclination to create a slashin' battle machine for the robot war competitions but are still interested in entering this world, try the following resources.



Robot Invasion: 7 Cool and Easy Robot Projects
Author: David Tanaka
McGraw-Hill/Osborne
ISBN 0-07-222894-4
Sales tax: 194 pages
Price: \$29.95

As the title implies, this book contains descriptions of seven robotic things you can make. Most, but not all, are based on the Lego MindStorcs robots kits. For example, one project uses Sectar set parts while a video-tact project involves a radio-controlled car and a video camera. After a brief introduction to robotics and Lego MindStorcs, the book gets right into making robots. At the beginning of each project is a parts list, the approximate

amount of time needed to build the project, and a level of difficulty rating.



Junkbots, Bopbots, and Bots on Wheels
Author: David Tanaka
McGraw-Hill/Osborne
ISBN 0-07-222893-3
Paperback: 375 pages
Price: \$19.95

Where *Robot Invasion* steps you through robot projects using existing items like the Lego MindStorcs kit, or even a radio-controlled car, this title gets to the down and dirty of building robots from scratch—often from reclaimed parts. The *BSA* technology in the subtitle refers to the principles Made Withen advocates should underlie any ingenious robot project: biology (taking cues from elegant systems found in nature), electronics (keep it simple), aesthetics (good designs are also elegant designs), and mechanics (efficient mechanical systems require less power and smaller electronics).

The first part of the book lays down some basic notions and advice on safety

and mechanical and electrical construction methods. For anyone who hasn't a clue about electronics, Chapter 2, "Identifying Electrical Bits," gives a very good summary of what capacitors, resistors, diodes, and transistors do, and how to identify various types of them. Most of the latter part of the book provides detailed instructions, parts lists, and illustrations on seven robot projects.



Robot Building for Beginners
Author: David Cook
Agnes
ISBN 1-893155-44-5
Paperback: 368 pages
Price: \$29.95

Take the "basics" section of *Junkbots, Bopbots and Bots on Wheels* and expand it to more than 500 pages, and you have pretty good idea of what this book is about. It has no instructions on how to build a specific robot, but is packed with details on most of the components (both electrical and mechanical) and their uses and need to build a basic robot. The book also includes use-

ful tips and strategies for choosing the solution over another; for example, if you want to change the speed of a motor, do you alter the voltage or use a gear set?

The book title implies that it is aimed at beginners, but really it is for beginners who already have a mechanical aptitude and wouldn't be the best choice for a gentle introduction to robots. But in conjunction with a title like *Junkbots*, it would make a dandy reference.



Creative Projects with Lego MindStorcs
Author: Benjamin Sweet
Agnes/Wiley
ISBN 0-201-70495-7
Paperback: 194 pages
Price: \$24.95

This book was published in 2001, so it may not be readily available, but it is a decent introduction to Lego's commercial robot kits. Included are parts descriptions, a section on robot building strategies, descriptions of the various MindStorcs products that were available at the time of writing, and some specific projects. ☐

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